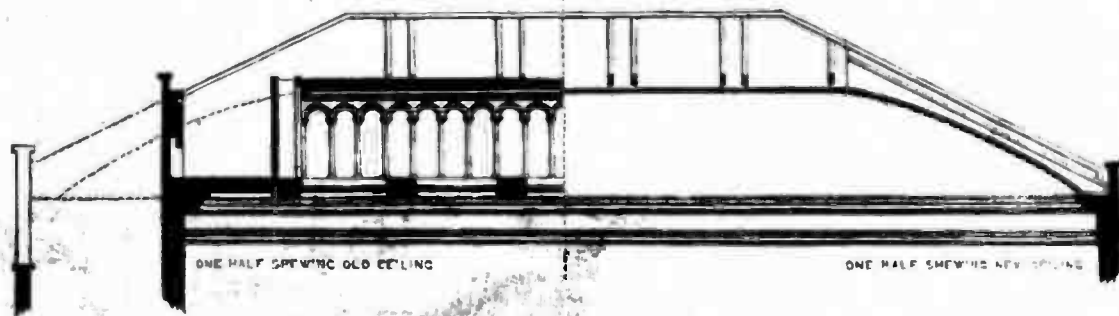


## THE NEW AND OLD ROOF OF EXETER HALL, STRAND.



LONGITUDINAL SECTION

Fig. 1.

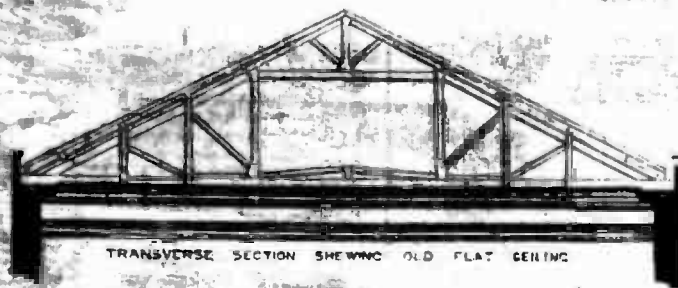


Fig. 2.



Fig. 3.

## CONVENT OF SISTERS OF MERCY, CORK.

SAINT MARIE's of the Isle, a Convent of the Sisters of Mercy, Cork, of which we give an engraving, is now being erected from the designs and under the superintendence of Mr. William Atkins, architect. The building contains an establishment for 40 nuns, an orphanage for 60 girls, a house of mercy with accommodation for 70 servants, a poor-school for 400 children, and a school for the daughters of the more respectable class. Under a tower at the north-west end of the front is an entrance for visitors, leading into a spacious gallery, communicating with the reception-rooms, appropriated to the instruction of servants, and the cloister of the convent. The other portion of the ground floor is occupied by the entrance for the sisters, the chapter-room, refectory of large dimensions with an open roof. The choir for the nuns, opening into the chapel, has two cut stone arches filled with screens.

The tower and spire are to be 160 feet high.\* The first floor contains the community-room, 40 feet by 22 feet; noviciate, 34 feet by 22 feet; private school-room, hospital, cells, &c. The upper floor is occupied by all the sleeping-rooms or cells, with a gallery extending the entire length of the building, intersected by a transverse one. The style of architecture is that which prevailed at the end of the 18th and in the early part of the 19th century, and is being executed with rubble masonry and chiselled limestone dressings. The joints of

\* The upper part of spire is omitted in the view to admit of a larger scale for the rest of the building.

the ceilings of the principal apartments are open and wrought, resting on templets supported by corbels.

## THE NEW ROOF AT EXETER HALL, STRAND.

WITH the view of improving Exeter Hall as a music room, and place for public speaking, very considerable alterations have been made, under the direction of Mr. S. W. Daukes, architect. The works are of so novel and ingenious a character, that we will go a little into detail, for the advantage of our readers.

The pillars with the entablature above supporting the hip trusses at either end of the hall, which curtailed the length nearly forty feet, have been entirely removed, so that the whole area of the hall is now thrown open. The flat panelled ceiling was removed, and the hall within the four outer walls is now covered with a coved ceiling, twelve feet higher in the centre than the former flat ceiling, all which has been done without disturbing the slating of the roof. It was a bold idea, and was effected by the introduction of wrought-iron arched girders, composed of plates varying in thickness from half an inch to a quarter of an inch, with angle iron at the top and bottom, stiffeners of strong T iron, and plates to cover the joints. These girders, put up in three pieces, were raised and supported in their places from the tie-beams of the roof, and were then riveted together with red-hot rivets, a furnace for that purpose having been erected in the roof. The ends of the girders were then supported upon smooth

grouted iron plates, to allow of the spread corresponding to the deflection of the arched girder without causing a thrust, or affecting the walls. Each girder, when it had been completely put together, and quite independent of any part of the old roof (which remained intact), was weighted with upwards of seven tons, the weight it would have to support, which was distributed over its length. The deflection from this process was one inch and an eighth, and the spread of the girder half an inch at each end, which took place on the plates, and so caused no thrust upon the walls. The girders, while weighted, were then bolted to one side of each of the old timber principals above the proposed coved ceiling, and then released of their weight.

Besides these girders there were two independent girders of a stronger construction, and nine smaller ones supporting the hips at either end; all of which were tested with corresponding weights.

This being done, the whole of the original constructed parts of the roof, beneath the curved line of new ceiling, and consisting of the tie-beams, queen post, and struts shown in figure 1, were entirely removed, when no visible deflection took place. Ceiling joints were then attached to the girders and the whole closely boarded over, with the exception of a number of circular openings, one over each chandelier, for ventilation.

The girders were calculated to support a weight of 64 lbs. per square foot, whereas the actual weight on them, we understand, is not more than 45 lbs. and the breaking weight 220 lbs. per square foot. The whole weight of the iron used is 75 tons, which, with the new ceiling, is one-third less weight than the original roof.

Mr. C. J. Mare, of Blackwall, constructed the iron girders, and Mr. G. Myers was the builder employed.

Fig. 1 shows a longitudinal section, with, on one side, the old ceiling and the interposing pillars which made each end of the hall mere recesses, and on the other side the new ceiling,—2, the old roof and flat ceiling, transversely,—and 3, the new ceiling as formed by the girders.

## THE LIVERPOOL BATHS AND WASHHOUSES.

A CORRESPONDENT who has recently visited the Baths and Washhouses now being erected for the corporation of Liverpool, in Cornwallis-street, has sent us the following particulars. The exterior of the structure is designed without any attempt at architectural display. The front is of stone, of the Italian style, simple in detail and general effect. The entire area occupied by the establishment is covered by four curvilinear roofs, which are made of galvanized corrugated iron sheets, and rough plates of glass, supported on wrought-iron principals. The portion of the buildings which runs parallel with Cornwallis-street contains the entrance-hall, lobbies, committee and waiting-rooms in the lower story, and ranges of